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Chapter I

★

BRIEF

OF

BULGARIA

(JANIS No. 38)

★

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## Chapter I

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## B R I E F

## 10. Physical Elements

## A. Orientation and military geography.

Bulgaria is the most easterly of the Balkan countries and adjoins the westernmost portion of the Black Sea (Figure I - 1). The country is roughly rectangular in form, having an average north-south dimension of about 175 miles and an east-west dimension of about 275 miles. Its area is about four-fifths that of England and Wales combined.

The principal physical features, alternating lowlands and mountains, trend east-west (see Chapter II). The moderately rugged Stara-Planina (Balkan Mountains)\* rise to about 8,000 feet and separate the rolling Danubian Tablelands on the northern edge of the country from the Central Depression in central Bulgaria. South of and parallel to the Central Depression are the Southern Highlands, a region of mountains and hills which are generally less rugged than the Stara-Planina. South of the Southern Highlands are the lowlands of Greece and Turkey.

About one-third of Bulgaria is forest-covered. This cover is mainly on the highlands and along streams, as generally the lower slopes are pastured and valleys and basins are cultivated.

East-west routes across the Danubian Tablelands in the north pass over rolling to hilly country and meet at Varna, the major port. However, large-scale movements across the Stara-Planina generally would be limited to the Iskr Gorge and the high passes at infrequent intervals. These north-south routes meet the important east-west routes of the Central Depression at Plovdiv and Sofiya (Sofia), the capital. Good north-south corridors, constricted in places, through the Southern Highlands, are provided by the Struma, Mesta and Maritsa River valleys. Routes along these corridors also meet the east-west routes in the Central Depression at Plovdiv and Sofiya.

## B. Oceanography.

Black Sea tidal currents and tides are negligible (see Chapter III, Topic No. 31). Five to ten miles off the Bulgarian coast is a southerly current, with speeds of one-half knot to one knot, but local wind currents may be expected closer inshore. Onshore or offshore winds (and sudden pressure changes) also may cause sea level variations of two to three feet.

The uncertainty and variability of these western Black Sea winds cause rapid changes in the intensity and duration of seas and swells. Calm or slight surf occurs on at least 20 days

each month. Rough seas, with short and steep waves of short periods, usually approach the coast from the northeast. These are most frequent from October through April and least frequent in May and June. Swells, three to six feet high and from the northeast, occur about five per cent of the time in summer and ten to 20 per cent of the time in winter. In November an easterly swell, six to ten feet high, may occur ten per cent of the time.

Shipping is not hindered by ice in the southwestern Black Sea although seasonal temperature changes near the surface are relatively large. Fog is most common along the coast in spring and least common in summer; however, "white fogs" occasionally develop rapidly during summer calms and may disappear in an equally short time.

The water of the Black Sea is probably never very clear. Conditions for echo ranging by surface vessels on submarines are good during winter; these conditions become progressively poorer during late spring and are poorest in early summer. Detection of moving surface vessels at night is enhanced by the phosphorescence of the water. Care should be taken to avoid flounder fishing grounds, 13 to 16 miles offshore in 40- to 50-fathom depths. From 40-fathom to 100-fathom depths the bottom is mud.

## C. Coastal hydrography.

Nearshore the coast is remarkably clear of obstructions (see Chapter III, Topic No. 32). Along all of the coast out to 30- to 40-fathom depths, the bottom material is generally sand, with occasional areas of silt, mud or shells.

From the southern coastal boundary to Sozopol depths of 100 feet and over are less than one mile offshore and numerous rocks and shoals are close to shore. The latter are well charted.

In the Gulf of Burgaz, between Sozopol and Cape Emine, bottom slopes are much more gentle. There 30-foot depths are generally nearly a mile offshore except northeast of Burgaz where this depth is locally two miles offshore. Numerous shoal areas are in the gulf, particularly near the city of Burgaz. Despite the shoals, this is one of the two Bulgarian harbors with a number of good anchorages for large vessels and which is suitable for the use of nets and mines.

North of Cape Emine the bottom generally is steeper than in the Gulf of Burgaz. However, in places between Cape Emine and Varna, 30-foot depths are as much as a mile offshore. The Varna harbor is the only other Bulgarian anchorage suitable for large vessels and the use of nets and mines.

Northward from Varna to Balcic, Rumania, 30-foot depths average about one-half mile from shore. Some well-charted rocky and shoal areas are scattered along this portion of the coast.

Fishing areas are additional obstructions to coastal navigation. The chief coastal fishing areas are within one-half to one and a half miles of shore along the open coast and in bays and harbors. Fish weirs are set close to harbor headlands.

\*The use of Appendix I for all spellings is recommended. The following spellings of features as used in this Chapter differ slightly from those on G.S., G.S. maps, Series 4072 and 4088: Bebrezh, Bozhurishte, Canara (Kana-Gol), Carasuum, Cherni Iskr, Chiprovtsi, Devna, Dobrich (Bazargio), Dobrinishta, Dubovo, Ellidere, Emine (town), Ghiaur Suiuciu (Chiaur Suiuciu), Gorna Dzhumaya, Gorna Orekhovitsa (Gln.-Orekhovitsa), Gulubovo (Gara-Glebovo), Kazanlk, Kharmarli, Koprivshitsa, Kuri Burnu, Ladzhene (Lzhene), Musala, Panagyurishte, Paphia (Mt.), Peinirdzhik, Perushitsa, Peshtera, Piraeivs, Pirdop (Pirdol), Polikraishte, Rakovets, Resen (Pesen), Sofiya, Sredets, Stizharov, Surnena Gora (Srneha Gora), Svishtov, Syuyutliika, and Trgovishte.

**D. Coasts.**

The Bulgarian coast is about 150 miles long and generally adjoins the Black Sea with a narrow beach behind which are steep cliffs or hills (see Chapter III, Topic No. 33). The latter are usually bush-covered.

From the Turkish border the coast trends generally north-west for about 35 miles to the southeastern headlands of the Gulf of Burgaz. This is a steep and rocky coast, interrupted by numerous small coves and bights and generally isolated from the interior of Bulgaria.

The Gulf of Burgaz is the largest indentation along the coast. North-south it is about 20 miles wide, east-west it is about 25 miles long. Lengthy beaches separated by short headlands line the gulf shore.

From Cape Emine a generally steep and rocky coast trends northward about 35 miles to Varna. The latter is on a small bay with low shores. Thence northward for about 20 miles to Balcic, Rumania, the coast is steep although occasionally broken by stretches of low shore.

**E. Landing places.**

Beaches occur at short intervals along the coast (see Chapter III, Topic No. 34). Almost all beaches are firm sand, or composed of pebbles, with firm sand beaches predominating. Many are backed by high land or by lagoons, and thus are relatively isolated from roads, railroads or immediate objectives.

The best beaches are those on the Gulf of Burgaz. There, a number of long and crescent-shaped beaches, separated by rocky headlands, line the shore from Sozopol to Cape Emine. All are composed of firm sand and have gentle to moderate slopes. In many cases they are backed by lagoons but several have exits leading to inland roads.

Next most suitable for landings is the series of beaches between Varna and Balcic, Rumania. At both of the towns and along the coast are several sand and pebble beaches, firm, with moderate slopes and generally extensive. Inland the terrain is somewhat higher than near Burgaz but numerous transportation lines are present for movement.

There are other recommended landing places which are long firm beaches affording access to towns or communication lines. North of Cape Emine are several long beaches. The most extensive is at the flood-plain edge of the Reka Golema Kamchiya, about halfway between Bela and Varna. Another is in front of Obzor, between Bela and Cape Emine. Although there are five more recommended beaches between the Gulf of Burgaz and the Turkish border, this is the least favorable portion of the Bulgarian coast for landings.

**F. Meteorology and climatology.**

Operations involving use of the beaches could be carried out under favorable weather conditions at sea from May to September (see Chapter IV). In this period at least 50 per cent of the days have calm or light seas. In other months calm or light seas occur about 20 per cent of the time.

Operations usually would not be hampered by strong winds although in winter strong northerly winds are liable to last two or three days and may reach gale force. At Burgaz and Varna westerly winds dominate during winter but easterly winds prevail during spring, summer and most of autumn. South and southeast winds are the most dangerous for amphibious operations as they blow against the current and produce

"hacking" waves. A westerly wind component is recorded at most Bulgarian weather stations although land and sea breezes are strongly developed along the coast.

Fogs prevail along the coast in spring. In May they occur about ten per cent of the time and in August not at all. Difficulty with ice usually would not be experienced in navigation to the Bulgarian shore. However, the Danube River is usually ice-bound for a month or so a short distance north of the Rumanian border.

Air operations would be most frequently hampered in the summer season by thunderstorms, usually accompanied by heavy rains. This applies especially over the mountain regions where high temperatures, light winds and rapid condensation contribute to thunderstorm development. However, the summer months are best for such operations when considering visibility, which is generally good over most of Bulgaria. In winter, aerial observation and photography would be hampered by maximum mean cloudiness; in December and January it is about 70 per cent in the interior and about 55 per cent at the coastal stations. Over the interior, radiation fog is the chief limiting factor of visibility. It is mostly a morning phenomenon with maximum frequency in the cooler seasons. Other special cases of poor visibility result from precipitation, dust or frontal fog within depressions.

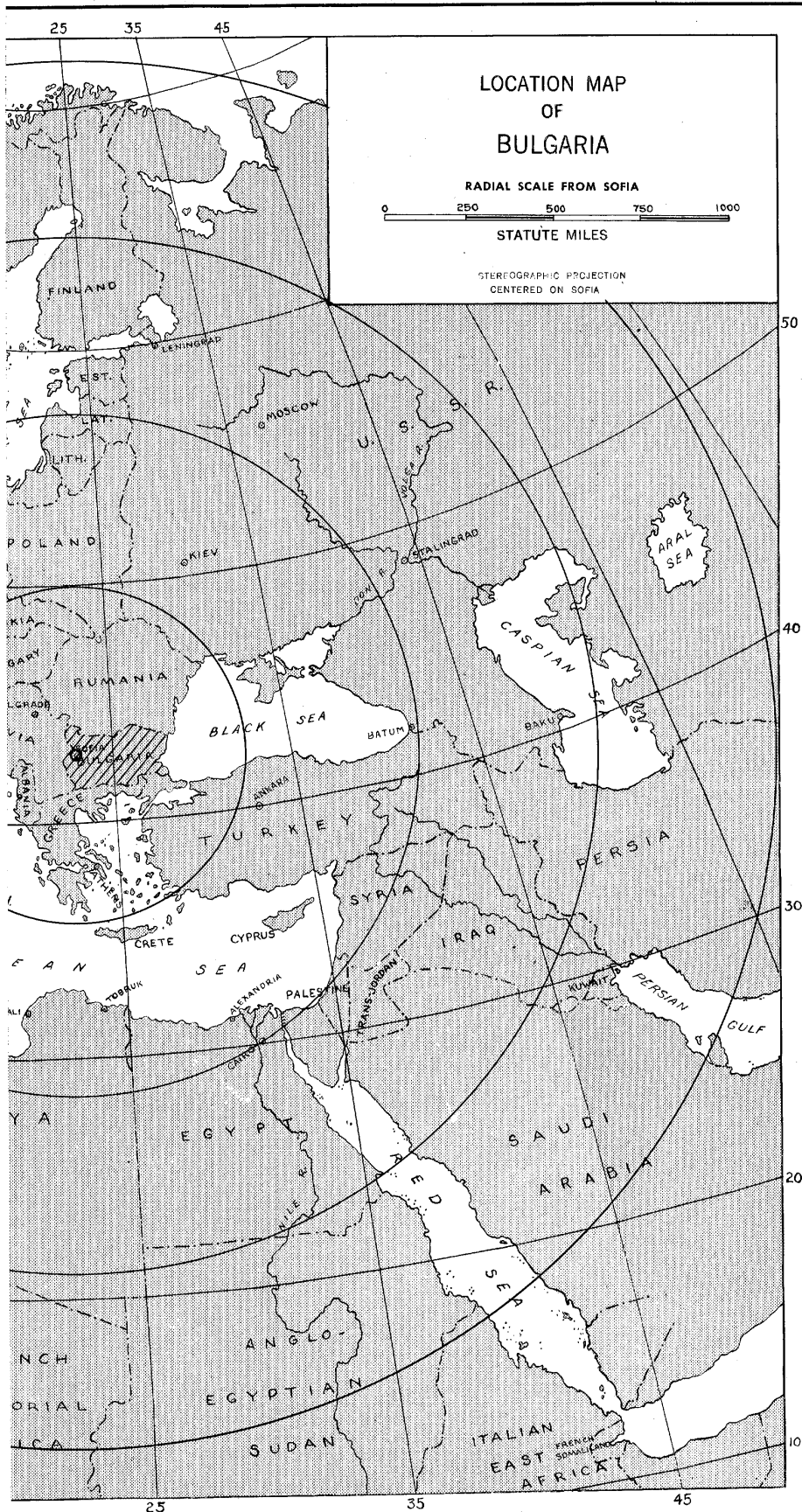
Ground operations would be easiest in September and October, the driest months. Although annual precipitation is fairly evenly distributed, such operations would be held up by floods in spring and heavy snows in winter. This applies especially to the Sofiya area, with heavy clay soils off the main roads, where sticky mud would hinder cross-country movement during spring and winter rains and to the mountain regions. In the latter, the ground is snow-covered more than two-thirds of each winter month hindering or blocking transportation on main roads which cross mountains at elevations of 3,000 feet or more. Snow falls about one-third of the time in December, January and February. In addition, high humidities (highest mean 83 to 89 per cent) and low temperatures (minima of  $-10^{\circ}$  F. common) would attend ground operations in winter. Ground operations in July and August would be during lowest humidities (means of 50 to 55 per cent) and highest temperatures (mean maxima of 80 to  $88^{\circ}$  F.).

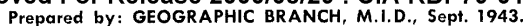
**11. Cultural Elements****A. Cities and towns.**

Only a small part of the estimated 6,450,000 people in Bulgaria live in cities and towns (see Chapter V). In 1934 (last census), there were only 29 cities with 10,000 or more inhabitants. The total population of these represented about one-fifth of the country's total.

The cities are of four functional types: agricultural centers, transportation centers, ports, and industrial centers. However, individual cities often have more than one function. For example, Sofiya is the political and cultural capital and the most important transportation and industrial center. Many of the agricultural centers also have minor industries based on local farm products. Likewise, Burgaz and Varna on the Black Sea and Ruse and Lom on the Danube River are the principal foreign trade ports but have important industries using imported raw materials. Other leading industrial cities

FIGURE I-1  
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are Plovdiv (also transportation center), Sliven, Gabrovo, and Pernik.

Most of the larger cities are in the Central Depression and Danubian Tablelands regions. All are on rail and highway routes and from all control could be maintained over fairly large surrounding areas. In the Stara-Planina and Rodopi Planina there are few towns, but some, like Kazanlk, would be important for control of the few passes.

Practically all of the cities have easily distinguishable older and newer sections; generally the newer are less compact and more regularly laid out. Most streets are two traffic lanes wide. Few buildings are modern, most being of stone or brick construction. Billiting facilities are scarce, except in the few largest cities, and school and other public buildings may be best for such. Open storage is possible in most cities and towns in parks, squares or nearby unsettled areas. However, complete and modern sewer systems are entirely lacking and urban sanitary conditions are generally poor.

#### B. Resources and trade.

With only a small part of the total population in cities and towns, Bulgaria has predominantly an agricultural economy, dominated by Germany (see Chapter VI). Few important export commodities are produced, except foodstuffs, and importation normally is necessary for the bulk of the manufactured goods and much of the industrial raw materials used. However, war conditions have caused increased exports, now going almost entirely to Germany, and have caused critical reductions in essential imports. These reductions have created serious shortages in manufactured goods and certain foodstuffs, particularly in the cities and towns. Sharply increased commodity prices and serious currency inflation have markedly lowered the domestic purchasing power of Bulgarian money and the rural 80 per cent of the population trades largely by barter.

Principal 1942 surpluses of food and related products, largely sent to Germany, were (in order of volume): grain, fruit and fruit products, oilseeds, tobacco, wines, vegetables, meats, and eggs. Sufficient processing facilities are available for domestic production of staple foods but virtually the only commercial canning and preserving of perishable foods has been for export; recently increased preserving facilities are for serving the German market. Despite the food surplus, shortages among the poorer urban people have been recurrent due to hoarding, an active "black market" and transportation difficulties; the country has been obliged to restrict supplies for its own use in order to provide additional shipments in an unequal exchange with Germany for essential manufactures, antiquated arms and frozen credits.

In addition to the food problem, urban water distribution facilities are primitive and all water must be treated before being used for drinking. However, the supply of water is ample throughout the country except in the Danubian Tablelands.

Under German pressure, all available acreage and potential resources are being investigated and exploited as the varied industrial raw materials of Bulgaria are only slightly developed. Therefore, a number of critical raw and semi-processed goods normally must be imported, including petroleum products, metals, hides, and textile fibers. Coal (mostly lignite) is the principal mineral product and is vital to domestic economy. Small quantities of iron, chrome, manganese, and

lead and zinc ores are produced for refinement abroad. All these are useful but not essential to Germany. Also there are ample domestic sources of most unprocessed construction materials, including lumber.

Like raw materials, the bulk of the manufactured goods used is imported and manufacturing is limited to the simpler processing. Electric power facilities are well developed in only two small districts. Only a small proportion of petroleum products used is refined in the country. The textile industry, the largest, fails to meet domestic needs and among the few things normally produced in sufficient quantities are alcohol, soap and some construction materials. War-time restrictions on raw material imports reportedly have forced partial shut-downs in the textile and other industries while extra demands for certain normally abundant commodities, like cement, have not been met by domestic plants.

To correct these problems, the Bulgarian Government carefully regulates all phases of economic life and recently has done much to increase production.

#### C. Communications.

Bulgarian communication facilities are poor compared to western Europe and the United States (see Chapter VII, Topics No. 71 to 75). The telecommunications trunk line follows the Orient Express route; from northwestern Bulgaria through Sofiya and Plovdiv and southeastward to Turkey.

Telephone, telegraph and radio lines are almost all aerial and follow roads and railroads. The telephone system covers most of the country but has very few telephones. Telegraph lines are scarce, and there are only three known radio broadcasting stations.

All telecommunications facilities are owned by the government and are operated by it under close German supervision. They are being improved slowly despite the lack of demand attending low living standards.

#### D. Transportation.

Like communication facilities, the transportation facilities of the country are poor compared to western Europe and the United States (see Chapter VII, Topics No. 76 to 78). Also, the main transportation lines, except the Danube River, follow the Orient Express route southeastward through the country.

Most of the transport routes run east-west through the Central Depression and meet at Sofiya, the principal transportation center. This city is connected by railroads and highways to the Danube River ports, the Black Sea ports of Burgaz and Varna and to the Aegean Sea by way of the Struma valley.

The rail-net is fairly extensive but is considered inadequate as the capacity of the lines is low. All lines are steam-operated and almost all are single track and standard gauge. The equipment is poor, rails are light, roadbeds are weak, and in the mountain regions steep grades and sharp curves are numerous.

Fairly good highways connect the major cities but there are few improved roads compared to the country's size. Most of these are of waterbound macadam and are suitable for two-way traffic. There are few alternate routes (usually narrow, rough and dusty) and bridges are generally weak.

The only inland water transport is that on the Danube River. However, most of the shipping in the Bulgarian por-

tion is transit traffic to and from neighboring countries and Ruse is the only important river port.

Roads, railroads and shipping in particular have suffered in the past from lack of capital. Although the transportation network now is being expanded rapidly with German help, it is still relatively poor.

#### E. Port facilities.

Burgaz and Varna are the major Bulgarian ports on the Black Sea and both have artificial harbors (see Chapter VIII). Between these two ports is a minor port and south of Burgaz are the remaining two minor ports.

At Burgaz, facilities at the main quay and its extension are available for handling about 2,250 short tons of general cargo per eight-hour day. Ships' gear is used for discharging. Berthing space also is available for one tanker and three gasoline pipe lines extend to mooring buoys. Railroad sidings, transit sheds, warehouses, storage tanks, and minor repairing facilities are available. The port has railroad and highway connections to the rest of the country. Normally, imports totaled about 90,000 short tons per year and exports about 158,000 short tons per year. Of the exports, most important were grains, oil cake and oil seed waste, tobacco, and fruit.

At Varna there are four quays and two railroad piers in the inner harbor and a southern breakwater and two docks in the outer harbor. The total capacity of the quays is 2,450 short tons per eight-hour day and for the railroad piers is 510 short tons. Capacities of the breakwater and docks are unknown. A 12-ton hand crane on a railway truck is available in the inner harbor except on the two of the quays which have railroad sidings. There are no mechanical handling facilities at the outer harbor berths, as they have no railroad connections, however, tugs and a few small lighters are available. Coal bunkering facilities are present and it appears that an oil pipeline extension for vessels is on the southern breakwater. Only two of the quays have transit sheds and naval oil storage tanks are nearby, but it is believed new underground tanks are under construction. Repairing is done at a small floating drydock nearby, a marine railway, the naval yards, the north side of the Devna Canal, and at the naval building yard (under the Germans) on the south side of Lake Devna. The port is connected to the rest of the country by railroad and highway. In 1937 the discharged cargo totaled 86,830 short tons and loaded cargo 171,172 short tons; it is mainly a grain exporting port and some of the chief imports are coal, coke, raw cotton, and textiles.

The three minor ports, Akhtopol, Nesebr and Tsarevo, are natural harbors with a few short quays or piers. Estimated unloading capacities are 80 to 200 short tons per day. Clearance facilities from all are poor, each having poor road and no known railroad connections to the rest of Bulgaria.

The merchant marine using these ports is small. It is composed of small vessels employed in coasting trade in the Black Sea and Bosphorus. In 1940 expansion of the fleet was planned but the extent to which it has been carried out is unknown.

#### F. People and government.

Bulgaria is a kingdom of about 6,450,000 people, 80 per cent of whom are engaged in agriculture (see Chapter IX). It is a relatively homogeneous country, Slavic in language, Orthodox in religion, peasant in economy, and still inexperienced in democratic government. Because of Balkan jealousies, economic ties with Germany and a pro-German dynasty, it has joined Germany, despite the attachment of the average Bulgarian to Russia. An Axis satellite, Bulgaria nevertheless retains a certain amount of independence in local administration, but has been generally coordinated into the German system and has received Greek and Yugoslav territory without fighting as a reward for adherence to the Axis. However, Bulgarians are disillusioned at the prospects of German defeat and of finding themselves opposite the Russians. Their chief desire is to keep Bulgaria itself from becoming a battle field. To this end they will avoid breaking with the Axis as long as possible. They show no willingness to fight outside their own frontiers. The Communist movement is strong in Bulgaria, but is unlikely to become dominant in any government unless bourgeois groups adopt a firm anti-Russian attitude.

Some type of agrarian democracy with peasant cooperatives, and close ties of friendship with the other Balkan countries and Russia would probably be favored by the majority of the population. The future disposition of territories long claimed by the Bulgarians, and given to them by Germany during this war, will be one of the most difficult questions of the European settlement.

## 12. Military Elements

#### A. Army (except Air).

See Chapter X, Topic No. 100, General Description.

#### B. Army Air.

See Chapter XI, Topic No. 110, General Description.

#### C. Navy (except Air).

See Chapter XII, Topic No. 120, General Description.

#### D. Navy Air.

See Chapter XIII, Topic No. 130, General Description.